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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/085,303	02/28/2002	William L. Bowden	08935-257001	7607

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EXAMINER

ALEJANDRO, RAYMOND

ART UNIT	PAPER NUMBER
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1745

DATE MAILED: 06/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/085,303	BOWDEN ET AL.	
	Examiner	Art Unit	
	Raymond Alejandro	1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 May 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) 8-17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

This office paper is submitted in reply to the amendment filed 05/17/04. Refer to the abovementioned amendment for specific details on applicant's rebuttal arguments. However, the present claims (including newly submitted claim 18) are finally rejected over the same art as seen below and for the reasons of record:

Election/Restrictions

1. This application contains claims 8-17 drawn to an invention nonelected with traverse in the reply filed on 12/08/03. A complete reply to the final rejection must include cancelation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-5 and 18 are rejected under 35 U.S.C. 102(e) as being anticipated by Blasi et al US 2002/0113622.

The applied reference has a common assignee and inventors with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

The present application is directed to a lithium electrochemical cell wherein the disclosed inventive concept comprises the constituents of the electrolyte mixture. Other limitations include the specific sodium content and the specific solvent-salts concentrations.

With reference to claims 1-5:

Blasi et al disclose an electrochemical secondary cell containing lithium salts and an anode containing lithium (ABSTRACT/SECTION 0010-0011). It is disclosed that the electrolyte can contain an organic solvent such as propylene carbonate (PC) and dimethoxyethane (DME) including combinations thereof (SECTION 0029). The electrolyte also contains a lithium salt such as LiTFS or LiTFSI or a combination thereof (SECTION 0029).

It is noted that in the absence of any electrochemical cell component/feature derived from and/or containing sodium (Na), the electrochemical cell must exhibit zero content of sodium (Na), that is to say, no sodium (Na) content at all. Thus, if both the anode material as well as suitable salts are selected from any material and/or salt except sodium (Na), the sodium (Na) content in the cell will be reduced to less than 600 ppm by weight. Thus, the sodium (Na) content is an inherent characteristic and/or property.

Therefore, the reference anticipates the claimed subject matter of the instant claims.

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4. Claims 1-7 and 18 are rejected under 35 U.S.C. 102(e) as being anticipated by Sloop US 2003/0186110.

As for claims 1-5:

Sloop makes known lithium batteries having suitable or typical electrolytes containing lithium salts dissolved in a carbonate solvent or solvent mixture (SECTION 0026). Examples of lithium salts include LiTFSI and LiTFS (lithium trifluoromethanesulfonate) dissolved in solvents such as DME (dimethoxyethane) and propylene carbonate (SECTION 0026).

It is noted that in the absence of any electrochemical cell component/feature derived from and/or containing sodium (Na), the electrochemical cell must exhibit zero content of sodium (Na), that is to say, no sodium (Na) content at all. Thus, if both the active materials as well as suitable salts are selected from any material and/or salt except sodium (Na), the sodium (Na) content in the cell will be reduced to less than 600 ppm by weight. Thus, the sodium (Na) content is an inherent characteristic and/or property.

As to claims 6-7:

Sloop further teaches a lithium salt concentration of 1.2 M in a 1:1 solvent mixture. The 1:1 ratio is equivalent to 50 % by weight of each solvent (SECTION 0026). In this respect, it is noted that Sloop immediately envisages how to prepare specific solvent mixtures by using any combination of the examples of solvents for the lithium salt. Thus, Sloop teaches the specific solvent mixture (i.e. the weight content) with sufficient specificity and applicable to any possible permutations of mixed solvents.

Thus, the claims are anticipated.

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5. Claims 1-6 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Flandrois et al 5554462.

Regarding claims 1-5:

Flandrois et al reveal a lithium rechargeable electrochemical cell (ABSTRACT). It is disclosed that the electrolyte is constituted by an organic solvent comprising a mixture of esters and/or ethers such as dimethoxyethane (DME) and esters selected from propylene carbonate (PC) among others (COL 4, lines 1-13). The solvents has dissolved therein a lithium salt selected from lithium trifluoromethanesulfonate and lithium trifluoromethanesulfonimide, among others (COL 4, lines 1-14).

It is noted that in the absence of any electrochemical cell component/feature derived from and/or containing sodium (Na), the electrochemical cell must exhibit zero content of sodium (Na), that is to say, no sodium (Na) content at all. Thus, if both the active materials as well as suitable salts are selected from any material and/or salt except sodium (Na), the sodium (Na) content in the cell will be reduced to less than 600 ppm by weight. Thus, the sodium (Na) content is an inherent characteristic and/or property.

On the subject of claim 6:

6. Flandrois et al further discuss an example wherein each cell includes an electrolyte composed of an organic solvent with was a mixture of 20 % by volume of PC and also containing DME in which the lithium salt was dissolved at a concentration of 1 mole/liter (1.0 M) (EXAMPLE 9 or COL 10, lines 10-20). *Since Flandrois et al directly disclose the use of propylene carbonate (PC) within the claimed concentration/content, as well as the teaching of constituting the electrolyte by employing a mixture of esters and/or ethers such as*

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dimethoxyethane (DME), it is thus understood that Flandrois et al implicitly shows the claimed weight percent. In this respect, it is also noted that Flandrois clearly envisages how to prepare specific solvent mixtures by using any combination of organic solvents comprising a mixture of esters and/or ethers. Thus, Flandrois teaches the specific solvent mixture (i.e. the weight content) with sufficient specificity no matter what are the specific solvents chosen from a variety of organic solvents comprising a mixture of esters and/or ethers.

For this reason, the claims are considered to be anticipated by the preceding prior art.

Response to Arguments

7. Applicant's arguments filed 05/17/04 have been fully considered but they are not persuasive. The main contention of applicants' arguments is premised on the assertion that "*a cell having zero sodium content does not necessarily flow from a cell made from active materials or salts that are selected from materials other than sodium. Rather, sodium can be introduced into a cell, e.g. as a trace element, in a variety of ways....including during manufacture and washing, by using electrolytic manganese dioxide, by components such as the anode, and the separator....unless specified to be free of sodium.*" To the extent the examiner can understand applicants' arguments, please note the following: the examiner does not comprehend why applicants argue that any article or product (i.e. the electrochemical) positively include an element/component unless specified to be free of an element substance (i.e. sodium). The examiner then respectfully states that applicant's position appears to be leading into the fact that the electrochemical cells of the prior art or any article/product must contain traces of each and every single element of the Periodic Table because the prior art does not state that the

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electrochemical cells or the articles/products are free of these elements. Stated somewhat differently, the examiner respectfully contends that applicants are currently trying to set forth an unusual way of interpreting references, disclosures and/or written language by strictly requiring that references, disclosures or written language positively state undisclosed-unintended limitations (negative limitations or absent characteristics) so as to constructively interpret or recognize that the undisclosed-unintended limitation is not positively disclosed by such reference, disclosure or written language. In other words, that the reference, disclosure or written language is required to explicitly-affirmatively negate or positively-explicitly exclude any element or component because otherwise the reference, disclosure or written language absolutely include the excluded-unintended element or component. Thus, under applicants' claim language interpretation, it would be fair to express that any reference positively include each and every undisclosed-unintended-excluded elements, components, features or limitations unless the reference itself does not positively disclose that the undisclosed-unintended-excluded elements, components, features or limitations are not present. If that is the case, the examiner respectfully disagrees with the foregoing claim language interpretation.

Accordingly, although the prior art fails to disclose the specific sodium content or the absence of sodium in the electrochemical cell, the examiner has a reasonable basis to suspect that the claimed electrochemical cell and the prior art's electrochemical cell would be substantially the same. Since PTO does not have proper equipment to carry out the analytical tests, the burden is shifted to applicants to provide objective evidence demonstrating that the claimed electrochemical cell is necessarily different from the prior art's electrochemical cell, and that the difference is unobvious. *In re Best* 195 USPQ 430 and *In re Fitzgerald* 205 USPQ 594. That is to

say, the burden is shifted to the applicants to supply, provide or present objective evidence showing that the electrochemical cells of the prior art contain traces of elemental sodium, and that the content of elemental sodium is greater than the claimed ppm(s) by weight.

8. With respect to the assertion that “the Sloop reference does not disclose the 1:1 ratio equivalent of the specific claimed solvents” and that “neither of the examples disclosed in Flandrois discloses a mixture of the specific claimed solvents as recited in claims 6-7”, in this regard, it is contended that Sloop immediately envisages how to prepare specific solvent mixtures by using any combination of the examples of solvents for the lithium salt. Thus, Sloop teaches the specific solvent mixture (i.e. the weight content) with sufficient specificity and applicable to any possible permutations of mixed solvents. Additionally, it is also asserted that Flandrois clearly envisages how to prepare specific solvent mixtures by using any combination of organic solvents comprising a mixture of esters and/or ethers. Thus, Flandrois teaches the specific solvent mixture (i.e. the weight content) with sufficient specificity no matter what are the specific solvents chosen from a variety of organic solvents comprising a mixture of esters and/or ethers.

9. Applicant's arguments do not comply with 37 CFR 1.111(c) because they do not clearly point out the patentable novelty which he or she thinks the claims present in view of the state of the art disclosed by the references cited or the objections made. Further, they do not show how the amendments avoid such references or objections.

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Raymond Alejandro whose telephone number is (571) 272-1282. The examiner can normally be reached on Monday-Thursday (8:00 am - 6:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Raymond Alejandro
Examiner
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